CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC) AGENDA
June 30, 2016 Meeting (9:00 am to end)
City of San Carlos
610 Elm Street, San Carlos CA 94070

The Meeting is open and public/local agencies are invited to attend. For further information regarding this meeting, please contact Chris Engelmann at (916) 653-1816, or email chris.engelmann@dot.ca.gov. Electronic copies of this meeting Agenda and minutes of the previous meetings are available at http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/index.htm.

Organization Items

1. **Introduction**
2. **Membership**
3. **Approval of Minutes of the March 3, 2016 Meeting**
4. **Public Comments**
   At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties have an opportunity to speak. When addressing the Committee, for the record please state your name, address, and business or organization you are representing.
5. **Items under Experimentation**

Agenda Items

6. **Public Hearing**
   Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code, the Department of Transportation is required to consult with local agencies and hold public hearings.

Consent Items (minor discussion with vote expected)

Agenda Item	Description	Submitted by:	Lead	Pages
16-13	Modify Section 6F.88, Screens	Caltrans	Tong	6

Information Items (New items that may be voted on or brought back as an Action Item in a future meeting)

Agenda Item	Description	Submitted by:	Lead	Page
16-11	Modify Shared Lane Markings Offset	Caltrans	Jones	7
16-12	Proposal to Reinstate "CAMPING PROHIBITED" SR-21-1(CA) Sign	Caltrans	Tong	9

Agenda Item	Description	Submitted by:	Lead	Page
16-14	Proposal to Use 6-inch Edge Lines	Caltrans	Tong	12
Withdrawn ~~16-15~~	~~Proposal to Modify W48(CA) 4 TRACKS Sign~~	~~Caltrans~~	~~Tong~~	~~14~~
16-16	Santa Rosa Bike Boxes	City of Santa Rosa	Olenberger	15
16-19	Single and multiple lane drop or option lane w/ lane drop Section 2E.24	Caltrans	Tong	21

Action Items (Continuing discussion from prior meetings with vote expected)

Agenda Item	Description	Submitted by:	Lead	Page
15-28	Subcommittee report on School Zones	CTCDC Subcommittee	Bahadori	27

7. Request for Experimentation

Agenda Item	Description	Submitted by:	Lead	Page
16-17	Request to experiment with bike boxes in the City of Cupertino	City of Cupertino	Sallaberry	30

8. Discussion Items

Agenda Item	Description	Submitted by:	Lead	Page
16-18	CalSTA request to expand CTCDC membership	Caltrans	Tong	37

9. Tabled Items

Agenda Item	Description	Submitted by:	Lead	Page
None				

10. Next Meeting

September 1, 2016
District 11
San Diego

11. Adjourn

5. Items under Experimentation

Some reports are available at: http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/status.htm

10-3 Experiment with Second Train Warning Sign "Additional Train May Approach" with a Symbol Sign (Submitted by City of Riverside) (Greenwood)

Status: 5/25/16 - The FHWA has not provided formal approval nor have they informed the City if the MUTCD plans on adopting the sign. Once we hear from the FHWA we'd be happy to make a presentation to the CTCDC on the outcome of our pilot project.

Thanks,

Gilbert Hernandez, P.E., T.E.
City of Riverside
City Traffic Engineer
ghernandez@riversideca.gov
951-826-5148

11-13 Experiment with a Sign "RECKLESS DRIVING PROHIBITED" (Winter)
Status: Experiment is on-going and has been extended to collect more data.

Arnel G. Dulay, P.E., T.E.
Head, Traffic Investigations II Section
Traffic and Lighting Division
(626) 300-4748; Dulay, Arnel [ADULAY@dpw.lacounty.gov]

11-19 Experiment with 2nd advance California Welcome Center Destination Sign (Tong)
Status: No Update at this time.

12-9 Request to Experiment with Yellow LED Border on Pedestrian Signal (Tong)
Status: 5/25/16 – Additional locations are being pursued to install this device and collect additional data.

The complete report is posted on the following website:
http://www.dot.ca.gov/hq/traffops/engineering/ctcdc/reports.htm

Rob Stinger, P.E.
Chief - Traffic Engineering & Operations
Caltrans District 2
530-225-3229

12-18 Request to experiment with Red Colored Transit-only Lanes (SF) (Walter)
Status: No new update

12-19 Request to Experiment with Highlighted Shared Lane Markings (LA City) (Bahadori)
Status: No new update.

12-21 Request to Experiment with In-Roadway Warning Lights (IRWL) System that would supplement existing traffic signals along the Metro Gold Line (LA Metro) (Winter)
Status: 7-28-15: Here is some background and current status information on the "In-Roadway Warning Lights" (IRWLs).

8(09)-8(E)-Red In-Roadway Lights at LRT Grade Crossings-Los Angeles, CA (Reference# HOTO-1)

The Los Angeles County Metropolitan Transportation Authority (Metro), in cooperation with the City of Los Angeles and the County of Los Angeles, has received permission from the FHWA to conduct a demonstration of an In-Roadway Warning Light (IRWL) system that would supplement existing traffic signal indications at (10) intersections along the Metro Gold Line Eastside Extension and (2) intersections along the Metro Blue Line. This non-standard traffic control system, which is composed of a series of LED lights embedded in the roadway is designed to increase the awareness of the street running light rail trains among motorists approaching the intersection. The IRWLs are intended to supplement (not substitute) the circular red signal indications being shown to the cross-street traffic and the red left turn arrow signal indications being shown to the traffic in the left-turn lanes on the roadway that is parallel to and on both sides of the LRT tracks. The added lights enhance warning indications for motorists when trains approach the intersections, deterring them from making illegal left turns and increasing compliance with red traffic signal indications. The system uses red in-roadway lights that steadily illuminate when LRT traffic is approaching or occupying the crossing.

Installation of the IRWLs at the (12) grade crossings is now complete and the two-year monitoring period began on May 1, 2015. Progress reports will be submitted to the FHWA every 6 months and will include data collected at the trial and control locations. The approved Evaluation Plan analyzes traffic violations observed by photo enforcement and in-field observation. Collected data will be summarized and compared to data collected prior to the IRWL installation. A final report will be developed once the monitoring period is complete on April 30, 2017.

For more information, please contact Lia Yim, YimB@metro.net

13-01 Request to Experiment with Green & Shared Roadway Bicycle Markings – Proposed by the City of Oakland (Patterson)
Status: No new update

Jason Patton, PhD
Bicycle & Pedestrian Program Manager
Transportation Planning & Funding Division
Department of Engineering & Construction
City of Oakland | Public Works Agency | APWA Accredited Agency
250 Frank H. Ogawa Plaza, Suite 4344 | Oakland, CA 94612

Items under Experimentation

(510) 238-7049 | (510) 238-7415 Fax
jpatton@oaklandnet.com

13-02 Request to Experiment with Bike Boxes and Wide Bike Strip Stripe (Walter)
-Proposed by the City of Davis
Status: (12/1/2014) City of Davis installed experimental bike boxes in September 2014. Experimentation is ongoing.

15-12 Evaluation of Traffic Calming in Treatments in Princeton, CA (Sallaberry)

Status: (5/26/16) 03-45-COL-Princeton Experimental Striping

We have no new data to share. However, we are currently working with Caltrans to see if we can revise the geometry of the optical bars/chevrons to a much longer length, and using wider striping. The hope is the outer locations will have reduced speeds similar to the central area of town (re: previous update letter.) We don't have definitive plans yet, but I'll forward anything we come to agreement on before installation. Let me know if we would need to bring this to the Committee before making changes to the original layout.

Scott M. Lanphier, PE, CFM
Director of Public Works+
1215 Market Street
Colusa, CA 95932
530-458-0466 (p)
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slanphier@countyofcolusa.org
www.countyofcolusa.org

Items under Experimentation

6. Public Hearing

Consent Items (New items that are voted on with minimal discussion)

Item 16-13 Modify Section 6F.88 Screens

Recommendation: Make a recommendation to change Section 6F.88 to reduce the minimum height of screens mounted on top of temporary traffic barriers and remove the guidance for screens without gaps.

Agency Making Request/Sponsor: Caltrans/ Duper Tong, voting member

Background
The Caltrans Standard Specifications require that a minimum height of 24 inches is required for screens mounted on temporary traffic barriers. The CA MUTCD indicates a minimum height of 32 inches. In addition, the CA MUTCD states that screens should be contiguous without gaps. The Caltrans Standard Specifications call for gaps every 200 feet to permit a stranded motorist to climb over the temporary traffic barrier if needed.

Proposal:
Changing the minimum height requirement to 24 inches would eliminate a discrepancy between the Caltrans Standard Specifications and the CA MUTCD. Modifying language on gaps as shown below would allow the engineer to make the determination on the use of gaps in screens.

Note: Red text is newly proposed text.
~~Struck-out blue~~ text is to be deleted from the CA MUTCD.
~~Struck-out black~~ text is to be shown as struck-out as this is federal MUTCD text.

Section 6F.88 Screens
Support:
01 Screens are used to block the road users' view of activities that can be distracting. Screens might improve safety and motor vehicle traffic flow where volumes approach the roadway capacity because they discourage gawking and reduce headlight glare from oncoming motor vehicle traffic.
Guidance:
02 *Screens should not be mounted where they could adversely restrict road user visibility and sight distance and adversely affect the reasonably safe operation of vehicles.*
Option:
03 Screens may be mounted on the top of temporary traffic barriers that separate two-way motor vehicle traffic.
03a Temporary traffic screen may be mounted on top of temporary traffic barriers, when barriers are used in transition and crossover areas for glare-control on high-volume roadways.
Guidance:
03b *If used, temporary traffic screen panels should be ~~contiguous without gaps,~~ minimum ~~32~~ 24 inches in height.*
04 *Design of screens should be in accordance with Chapter 9 of AASHTO's "Roadside Design Guide" (see Section 1A.11).*

Item 16-13 Modify Section 6F.88 Screens

Information Items (New items that may be voted on or brought back as an Action Item in a future meeting)

Item 16-11 Modify Shared Lane Markings Offset

Recommendation: This item is proposed as an informational item and may be brought back at a future meeting for a vote on potential changes. No action vote is requested.

Agency Making Request/Sponsor: Caltrans/ Bryan Jones, Active Transportation Voting Member

Background:

Local agencies see a need to modify the CA MUTCD to reflect preferred or desired offset distances for Sharrows. Currently the CA MUTCD has the following:

Section 9C.07 Shared Lane Marking

Option:

01 The Shared Lane Marking shown in Figure 9C-9 may be used to:

A. Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle,

B. Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane,

C. Alert road users of the lateral location bicyclists are likely to occupy within the traveled way,

D. Encourage safe passing of bicyclists by motorists, and

E. Reduce the incidence of wrong-way bicycling.

Guidance:

02 Except as provided in Paragraph 02a, *the Shared Lane Marking should not be placed on roadways that have a speed limit above 35 mph.*

Option:

02a The Shared Lane Marking may be placed on roadways that have a speed limit above 35 mph, where there is bicycle travel and there is no marked bicycle lane and the right-hand traffic lane is too narrow to allow motor vehicles to safely pass bicyclists.

Standard:

03 **Shared Lane Markings shall not be used on shoulders or in designated bicycle lanes.**

Guidance:

04 *If used in a shared lane with on-street parallel parking, Shared Lane Markings should be placed so that the centers of the markings are at least 11 feet from the face of the curb, or from the edge of the pavement where there is no curb.*

05 *If used on a street without on-street parking that has an outside travel lane that is less than 14 feet wide, the centers of the Shared Lane Markings should be at least 4 feet from the face of the curb, or from the edge of the pavement where there is no curb.*

06 *If used, the Shared Lane Marking should be placed immediately after an intersection and spaced at intervals not greater than 250 feet thereafter.*

Option:

07 Section 9B.06 describes a Bicycles May Use Full Lane sign that may be used in addition to or instead of the Shared Lane Marking to inform road users that bicyclists might occupy the travel lane.

Proposal:

Develop guidance in the CA MUTCD and consider a minimum of 13 feet for an offset distance.

The following are comments received on this item for discussion purposes:

- On Apr 28, 2016, at 10:20 AM, Miller, Rock <Rock.Miller@stantec.com> wrote:

  I looked at the BTC progress on an updated Sharrow section. There is a lot in BTC working draft that probably would not make it into the final version or that needs severe word smithing, but the suggested change for this specific topic merely changes 11 feet to 13 feet and suggests changing the words from "at least 11" to "a minimum of 13 feet.

  It also cites some studies to support the shift.
  The Bike Tech Committee of the NCUTCD has been working on a proposal, but it is not in reviewable draft form yet. There is no simple value or formula that takes into account width, parking etc. But the issue is heard everywhere sharrows are used.

  The next version of the Fed MUTCD is on indefinite hold but probably 3 years away. Add two more years for it to get into the CA version. The committee above probably finishes its work in time to make it into the delayed process.

  Since it is a guideline, the State could probably add or modify language for California.

- Paul Martin, OCTA: It would be handy to get the modified language on the radar for the CA MUTCD. While the minimum standard might not be changed, maybe language about "desired" placement could be included with background for cities that are doing their first installation and need additional help.

  Has there been any past interest in modifying the language in the MUTCD regarding the offset distance for shared lane markings? The response from OC advocates is frustration that the offset is ineffective. I'd suggest the offset be the center of the travel lane for the following reasons:
  1. Promote motorists passing of cyclists by changing lanes and avoiding "squeeze" where motorist tries to pass without overlapping into adjacent lane or fully changing lanes.
  2. Placement in center limits tire tread marks on the SLM's allowing for improved longevity and reduced maintenance costs.
  3. Encourages cyclists control the lane in the center rather than a partial lane take when only offset by 4' where parking isn't provided.

  I suppose the center of the lane might need some upper lane width requirement, such as 16' or so where a bike lane could realistically be striped but the local jurisdiction isn't interested in a full Class II.

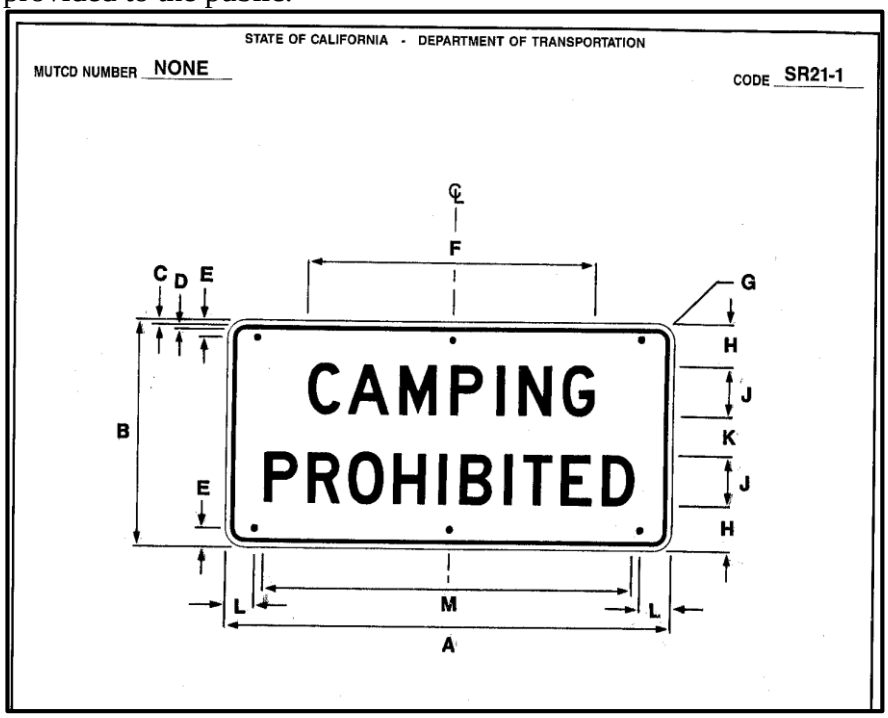
Item 16-12 Proposal to Reinstate "CAMPING PROHIBITED" SR21-1(CA) sign

Recommendation: Provide a recommendation to reinstate the "CAMPING PROHIBITED" SR21-1(CA) or similar message sign.

Agency Making Request/Sponsor: Caltrans/ Duper Tong, Voting Member

Background

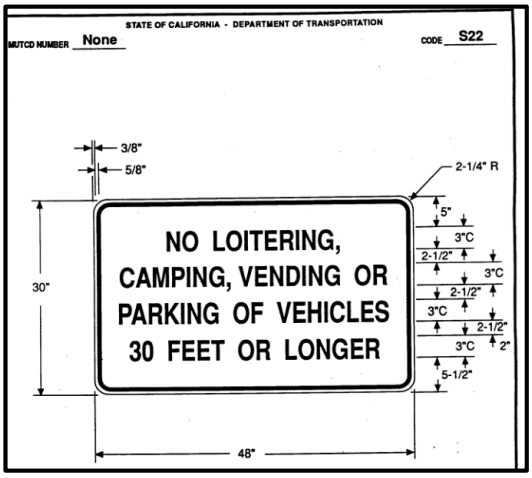
Some Caltrans Districts are experiencing illegal camping in certain areas. With a local ordinance in place, law enforcement is limited in enforcing the ordinance if there is no sign posted and no notice provided to the public.



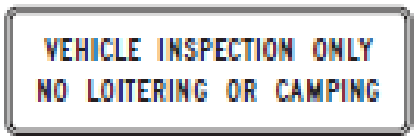
SR21-1(CA)

SR21-1 CAMPING PROHIBITED sign was available for use in locations where camping activities were deemed illegal. In 2010 it was removed from the CA MUTCD, likely because there was a shift to go with federal MUTCD prohibitive signs instead of text versions.

Currently, the only sign available in lieu of the SR21-1 is the larger S22, however this sign does not address RVs less than 30 feet in length. S22-1(CA) is available for vehicle inspection locations.



S22

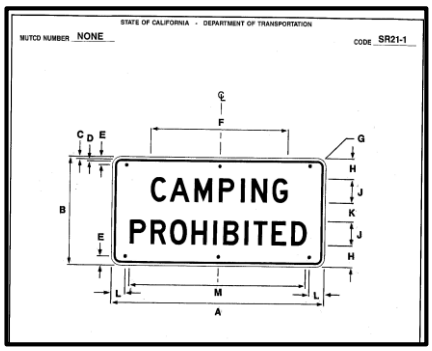


S22-1(CA)

Proposal

A current alternative would be a prohibited camping sign as illustrated below, however, the tent symbol may not be adequate for enforcing illegal camping by recreational vehicles. This is a Park Services sign and is not recognized by FHWA.

Bring back the SR21-1(CA) as an option where camping is prohibited, including recreational vehicles of all sizes.



SR21-1(CA)

Another option is to utilize a Sign with the text “NO CAMPING” with a series of signs accompanying the restriction.

Current General Service Sign

PS-D9-3(CA)
PS-040(CA)
PS-104(CA)
PREP-D9-3(CA)

Future Sign Options

Item 16-12 Proposal to Reinstate “CAMPING PROHIBITED” SR21-1(CA) sign

Item 16-14 Proposal to use 6-inch Edge Lines

Recommendation: Provide a recommendation on the use of 6-inch edge lines in the CA MUTCD.

Agency Making Request/Sponsor: Caltrans/ Duper Tong, Voting Member

Background

The use and function of color and pattern are clearly defined in the CA MUTCD for pavement markings. However, the use and function of marking widths is not so clearly defined. While it is clear that longitudinal markings must be at least 4 inches in width, it makes no mention about the use of longitudinal markings width for conveyance of a specific delineation message. Based on Section 3B.06 of CA MUTCD, Edge Line Pavement Markings, the standard width for a right edge line is 4 inches. The standard also states that the right edge line shall consist of a normal solid white line. Per section 3A.06 of CA MUTCD, a normal line is defined as a line 4 to 6 inches wide. See below:

Figure 1: 4-inch edge line traffic stripe

Section 3A.06 Functions, Widths, and Patterns of Longitudinal Pavement Markings
Standard:
A. Normal line — 4 to 6 inches wide.

Section 3B.01 Yellow Center Line Pavement Markings and Warrants
Standard:
19 **A left edge line shall consist of a solid 4 inch wide yellow line, yellow reflective pavement markers or a combination of line and markers as shown in Figure 3A-105(CA).**

Section 3B.06 Edge Line Pavement Markings
Standard:
08 **A right edge line shall consist of a solid 4 inch wide white line.**

Proposal

Based on the language of CA MUTCD, it is apparent that the use of wider longitudinal pavement markings is permissible and left to the discretion of the agency responsible for the roadway.

Caltrans' existing standard plans show a 4-inch wide traffic stripe for right edge line. The 4-inch wide traffic stripe is to be used as a minimum. Districts can use widths of up 6 inches if the use of wider traffic stripes can enhance safety.

To adopt the use of 6-inch edge line traffic stripe as a standard in Caltrans' Standard Plans, a policy change in CA MUTCD through the CTCDC process.

ne)

One of the California Strategic Highway Safety Plan (SHSP) challenge areas is on older drivers and one of its goals is to improve traffic control devices for older drivers. Implementing 6-inch wide edge lines, as is done in many other States, is a way to improve visibility of traffic control devices for older drivers.

Caltrans may implement 6-inch wide edge lines on its State Highway System through changes in the Caltrans Standard Plans. Local agencies may adopt the Caltrans Standard Plans as their standard for such striping details, but would not be required. Would it make sense to adopt a statewide policy on using 6-inch wide edge lines on <u>all</u> California highways?

If so, the proposed changes in the CA MUTCD may be as follows:

Note: Red text is newly proposed text.
~~Struck-out blue~~ text is to be deleted from the CA MUTCD.
~~Struck-out black~~ text is to be shown as struck-out as this is federal MUTCD text.

Section 3B.01 <u>Yellow Center Line Pavement Markings and Warrants</u>
Standard:
19 **A left edge line shall consist of a solid 4 6 inch wide yellow line, yellow reflective pavement markers or a combination of line and markers as shown in Figure 3A-105(CA).**

Section 3B.06 <u>Edge Line Pavement Markings</u>
Standard:
08 **A right edge line shall consist of a solid 4 6 inch wide white line.**

Additional figures in the CA MUTCD would require updating to reflect 6-inch edge lines.

WITHDRAWN

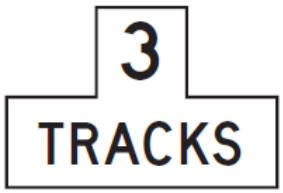
Item 16-15 Proposal to Modify W48(CA) 4 TRACKS sign

Recommendation: Request the committee to make a recommendation on whether to modify the W48(CA) 4 TRACKS sign in Figure 8B-4

Agency Making Request/Sponsor: FHWA/ Duper Tong, Voting Member

Background:
The W48(CA) 4 TRACKS warning sign has a unique shape and FHWA has requested that it'd be converted to a more conventional warning sign with black borders and black on yellow lettering. This sign was "grandfathered" into the CA MUTCD when the manual replaced the Traffic Manual. The federal MUTCD has the R15-2P placard in regulatory form (black on white). The W48(CA) sign is required below the advanced Railroad Crossing sign, W10-1 when there are two or more tracks.

W48 (CA)



R15-2P

W10-1

Proposed:

W48 (CA) Proposed

Item 16-16 Santa Rosa Bike Boxes

Recommendation: Provide input on four existing bike boxes in City of Santa Rosa.

Agency/Sponsor: City of Santa Rosa/ Emma Olenberger AAA Northern California, Nevada & Utah

Background: Between calendar years 2012 and 2013, City of Santa Rosa's Traffic Engineering Division of Transportation and Public Works installed single direction Bike Boxes at four intersections (three signalized and one stop controlled T-intersection). At the time, the City staff were under the impression that installation of Bike Boxes had passed the experimental phase and are under interim approval of the Federal Highway Administration.

Each of the following intersections described below were provided with a single Bike Box for the direction listed. These Bike Boxes have been marked and maintained since the initial installation and have received positive feedback from the resident as well as the Bicycle and Pedestrian Advisory Board (BPAB) which is appointed by the Santa Rosa City Council.

Recently, it was determined that Bike Boxes are still considered experimental and, as such, the City's Traffic Engineering Division of Transportation and Public Works staff have decided to submit this request in order to gain the support of the CTCDC for their presence as a continued experiment

The locations are all within the City limits of Santa Rosa and all are in continuation of a bike lane on an arterial street.

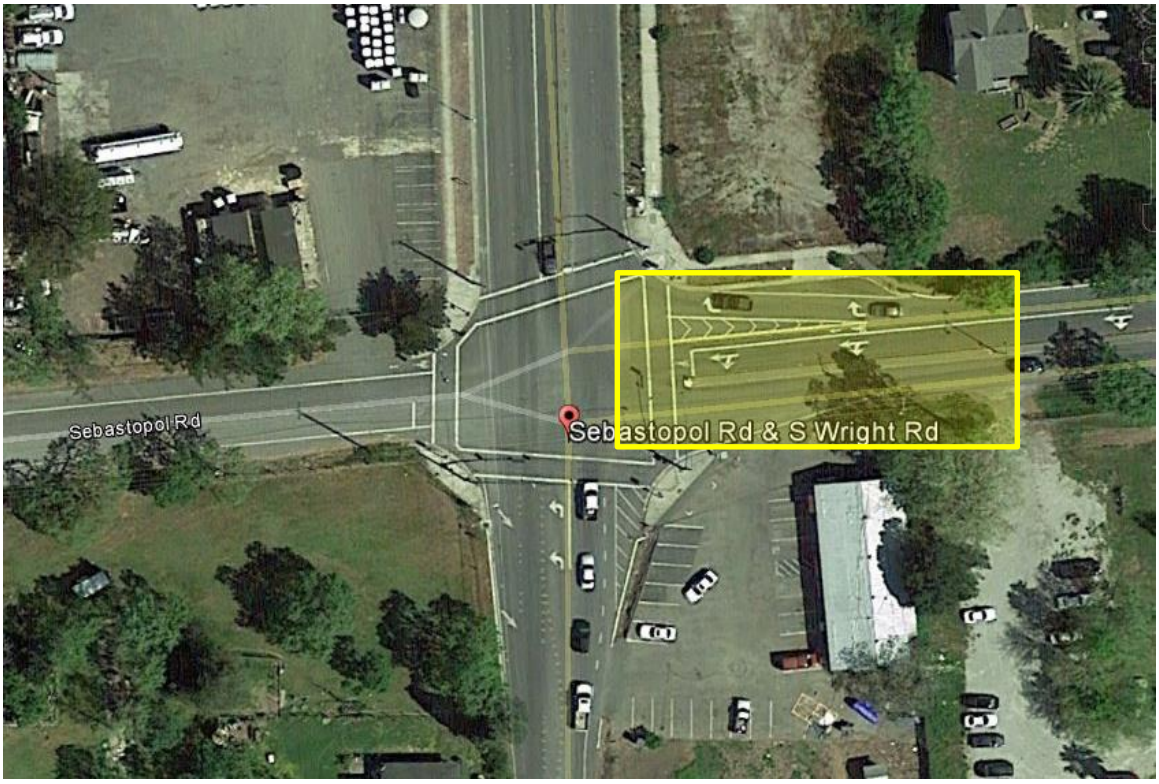
Based on feedback from the bicycle community, area residents, field observations and crash history over the last 10 years of reported crashes, it is apparent that at least in some cases the bike crashes have been reduced.

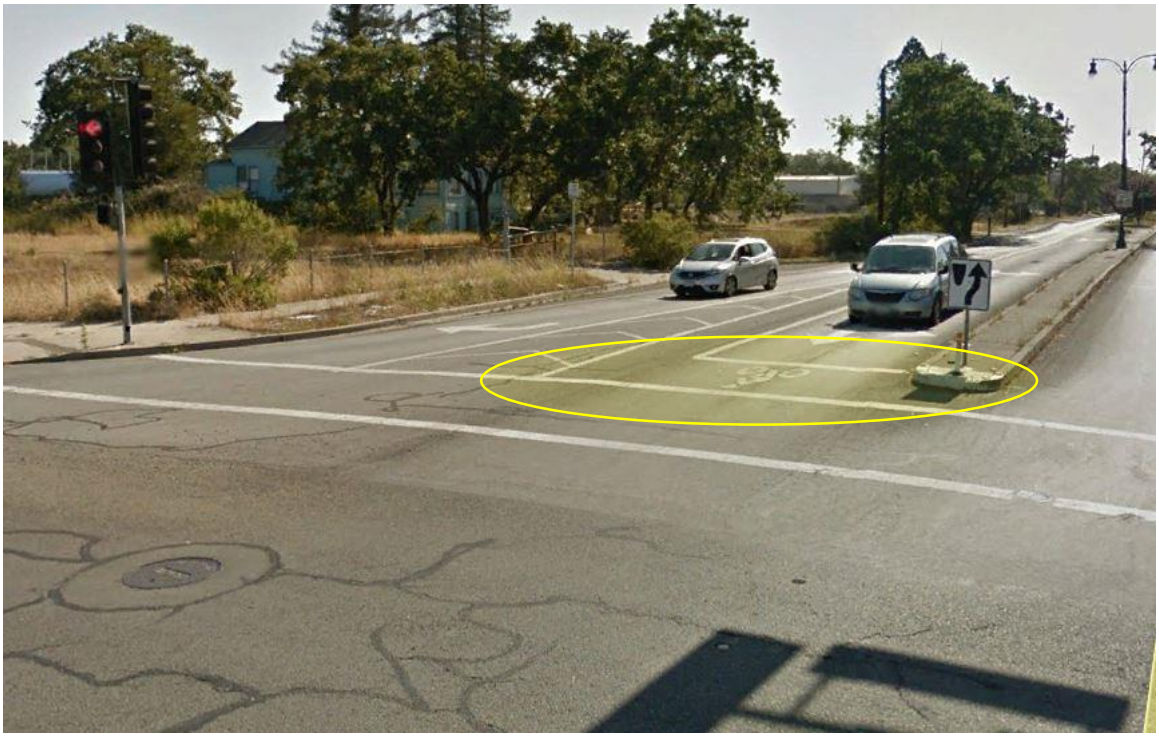
The City has been consistent in its implementation, and in all cases the Bike Box has been placed in front of a shared through/left single lane on an arterial. By establishing a rider in front of the queue, the level of attention to the rider is enhanced, and conflict zones have been minimized.

The following pictures show each location and configuration used.

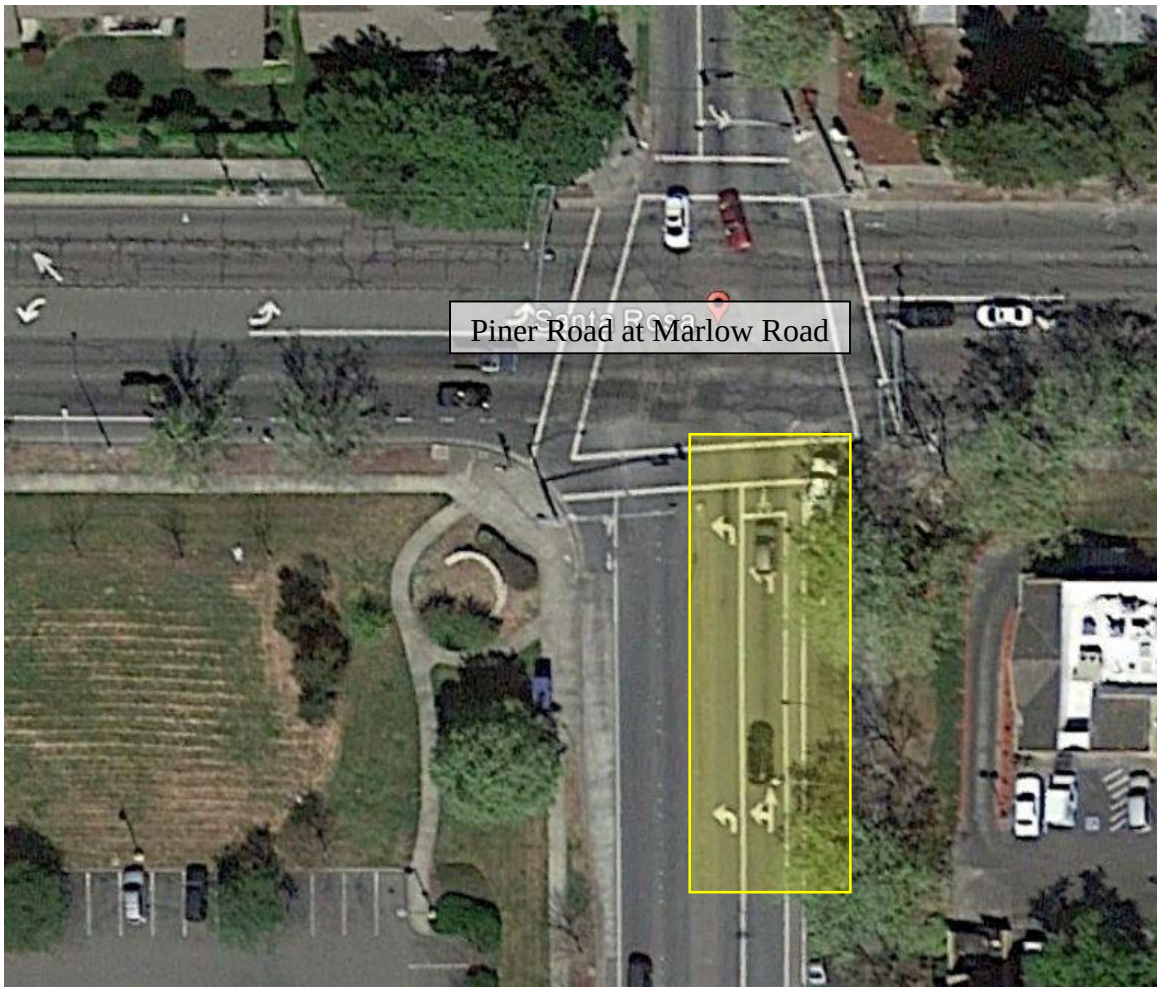
Bike Box locations are:

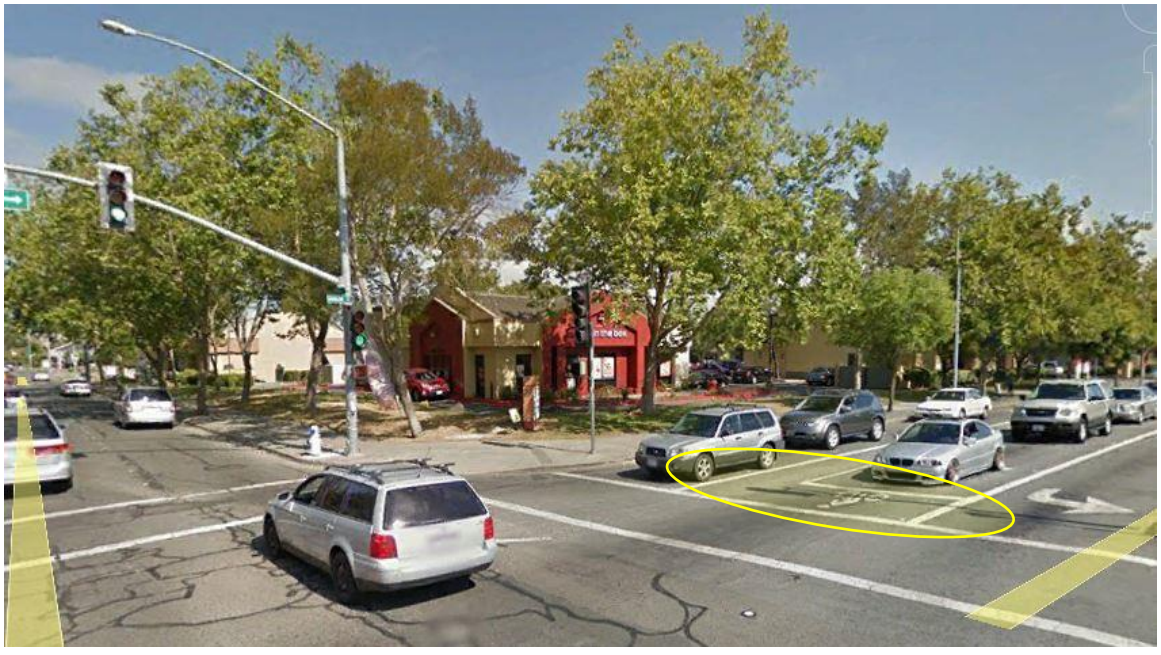
1. Sebastopol Road at Wright Road, east leg westbound in front of a shared Left/Through lane.



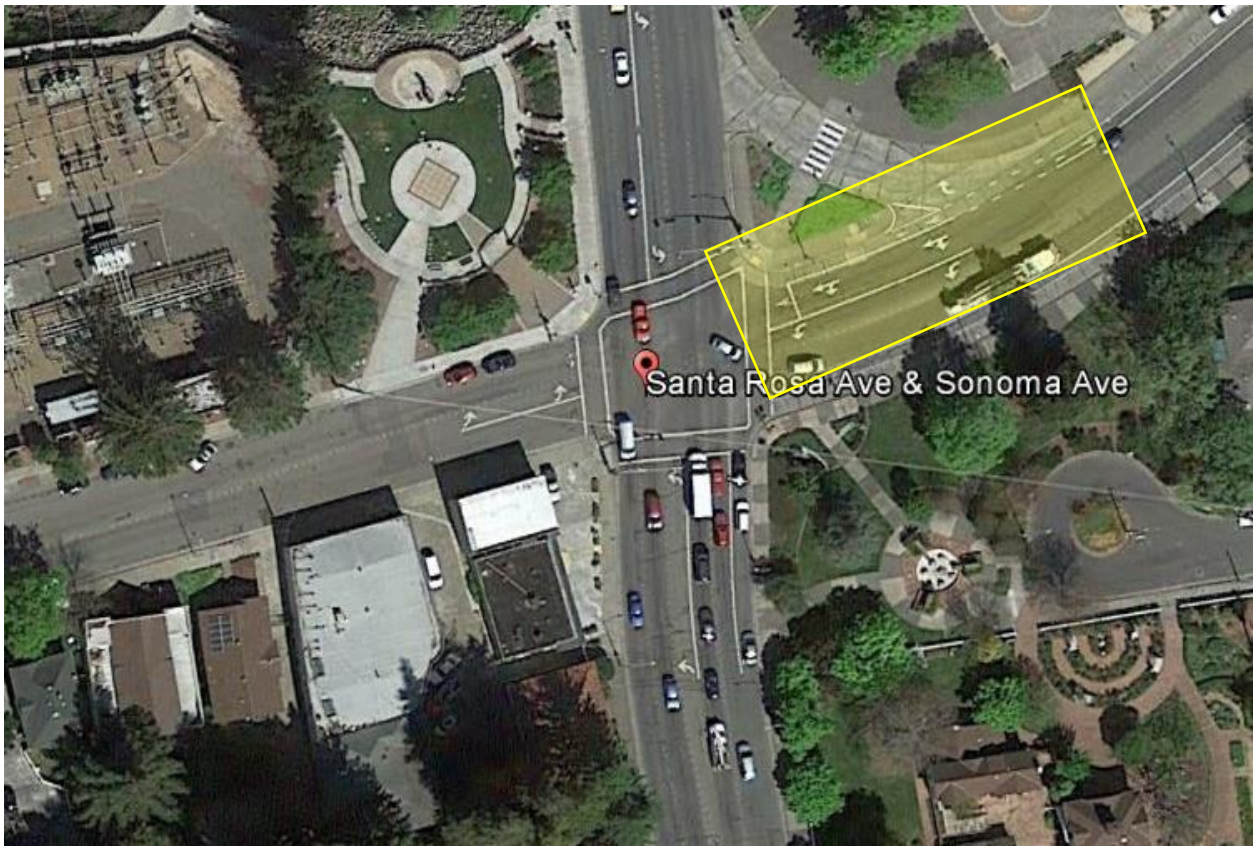


2. Marlow Road at Piner Road - South Leg northbound in front of a shared Left/Through lane.

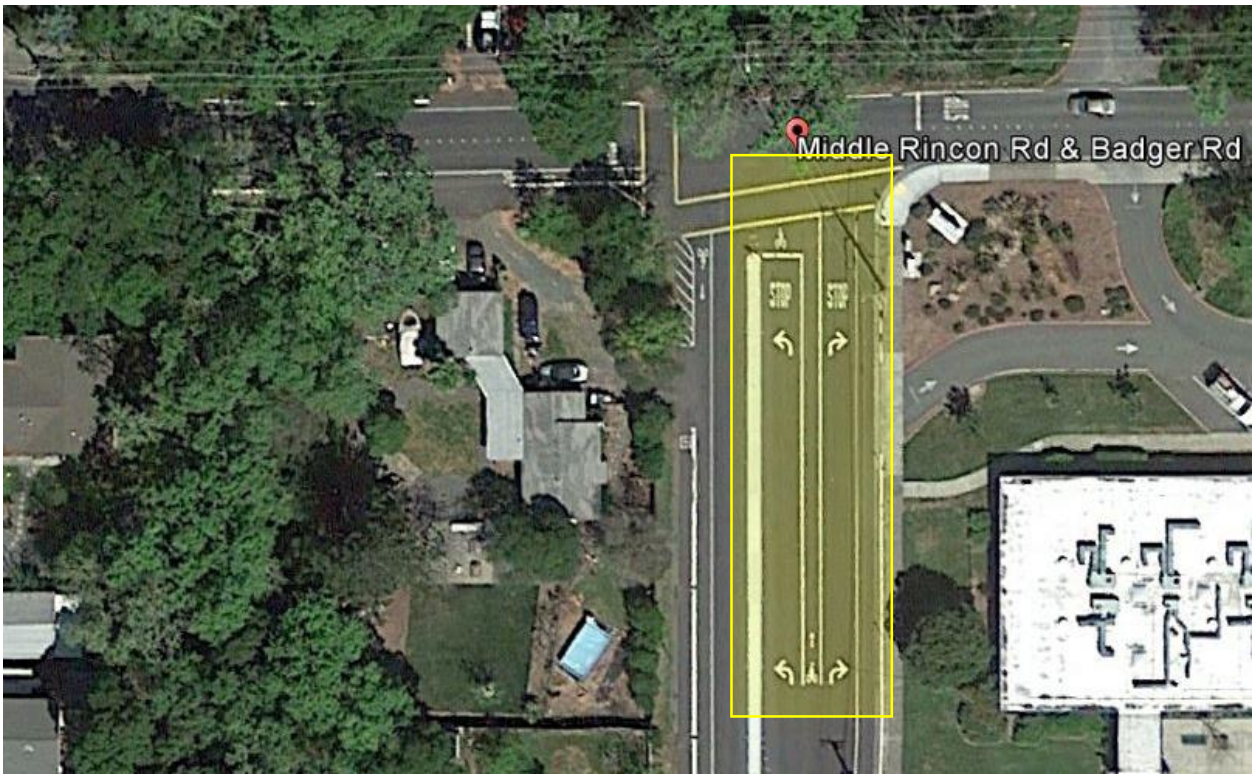




3. Sonoma Avenue at Santa Rosa Avenue – Westbound in front of a shared Left/Through lane.



4. Middle Rincon Road at Badger Road – Northbound in front of an exclusive Left Turn Lane.



The review of before and after crash history revealed the following results over ten years between January 1, 2006 and December 31, 2015:

- Crash history at the intersection of Sebastopol Road and South Wright Road shows a total of 9 collisions with one involving a car and bicycle in 2011. Since the installation of the Bike Box no such collisions are reported.
- Crash history at the intersection of Marlow Road and Piner Road shows a total of 24 collisions with one involving a bicycle on the east leg of the intersection. No crashes are reported in the Bike Box.
- Crash history at the intersection of Sonoma Avenue and Santa Rosa Avenue shows a total of 22 crashes with two involving bicycles in the other direction than where the Bike Box is present. No crashes are reported in the Bike Box.
- Crash history at the intersection of Middle Rincon Road and Badger Road shows one crash. No crashes are reported in the Bike Box.

Crash History

Intersection	Entering Volume (daily)	Direction of Bike Box	Total Crashes (10 yrs)	Bike Related Crashes	Bike Crashes in Bike Box
Sebastopol Road at Wright Road	14,550	Westbound	9	1	0
Marlow Road at Piner Road	30,050	Northbound	24	1	0
Sonoma Avenue at Santa Rosa Avenue	29,550	Westbound	22	2	0
Middle Rincon Road at Badger Road	5,250	Northbound	1	0	0

A close and specific evaluation of how bike crashes may have been reduced were not conducted, since the City staff were not aware of the Bike Boxes being experimental, but Bicycle and Pedestrian Advisory Board (BPAB) has expressed appreciation for having them at these locations in the City of Santa Rosa. Furthermore, lack of bicycle crashes and no related complaints for more than ten years could be indicative of the enhanced bicycle traffic flow through the intersections as well as them being accepted by the community.

In addition, the City will be willing to provide any new data collected at these locations to California Traffic Control Devices Committee and Federal Highway Administration to support the cause toward the ultimate approval of Bike Boxes at the national level.

City of Santa Rosa has no plan to add any additional Bike Boxes as long as they are considered experimental, but the City is planning to enhance some of the existing bike lane transition areas at busy intersections with green bike lane segments.

Item 16-19 Single and multiple lane drop or option lane w/ lane drop Section 2E.24

Recommendation: Modify all California text, tables, figures, and signs from Section 2E.24 Signing for Interchange Lane Drops because of a conflicting double standard in current section to optional statements.

Agency Making Request/Sponsor: Caltrans/ Duper Tong, voting member

Background:
In the current CA MUTCD, paragraph 03 and paragraph 13-14 generate a double standard for the same situation for sign designers. This has led to inconsistent sign design across the state with the majority of agencies using the PP13-14 standard. In addition the 20 inch tall California signs (W61D (CA), W61E (CA), W61F (CA), and W61G CA) are not equivalents to the national minimum of 36 inch tall panels (E11-1, E11-1d, E11-1e, E11-1f). For simplicity the E11-1a, E11-1b, and E11-1c already exist nationally to meet potential retrofitting needs of agencies in California per paragraph 06, therefore the W61A (CA), W61B (CA), and W61C (CA) are not necessary.
The W61 (CA) Series of signs will be moved to an option statement where the E11 series panel does not fit due to space needed to identify destination and it is technically infeasible to place a larger overhead structure due to a combination of factors.
The following two pages illustrate the difference in freeway signage using paragraph 13-14 on the left side and surrounding states using the National MUTCD paragraph 03 on the right half of the pages.

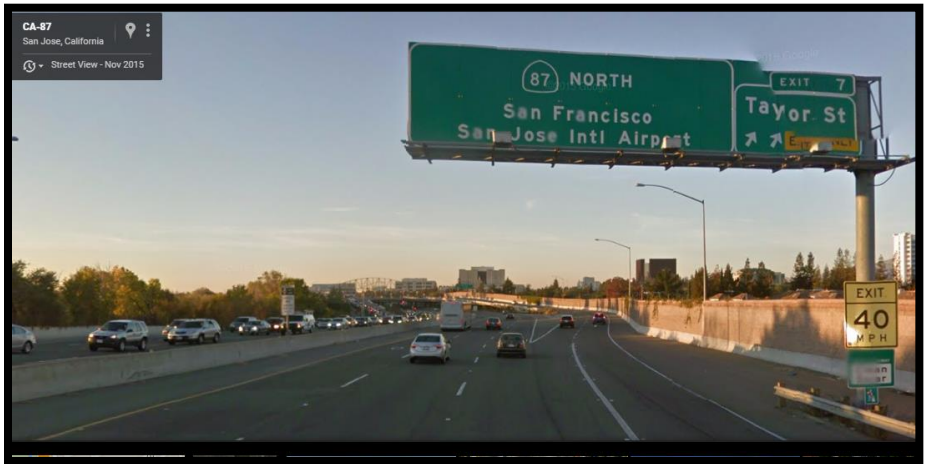


Figure 1 CA- CA specific language multilane exit with option @ gore

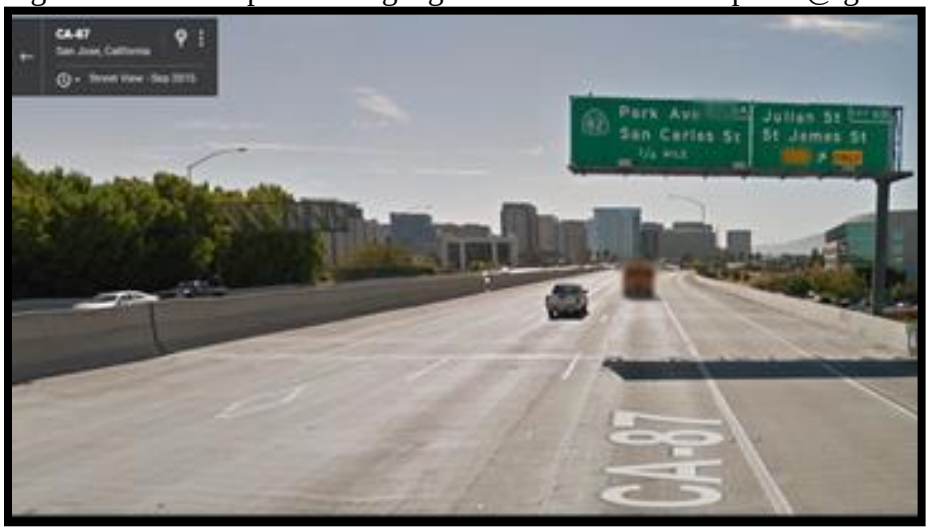


Figure 2 CA- New sign and structure: treatment only for retrofits per 2E.24 PP06

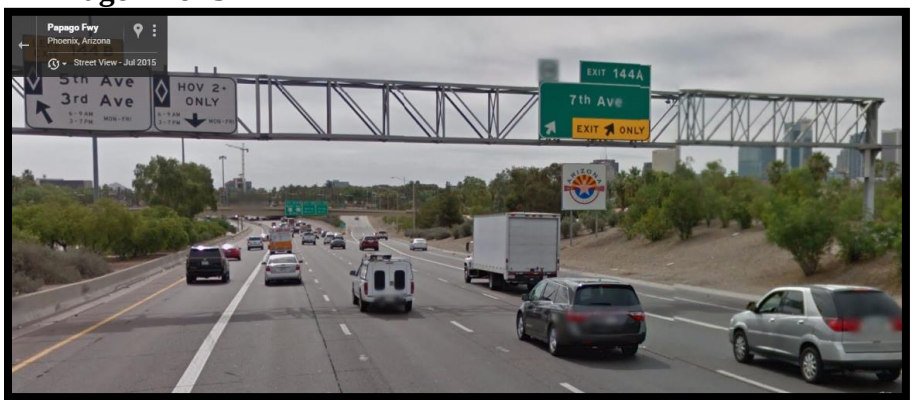


Figure 1 N- National option to multilane with a lane drop @ gore

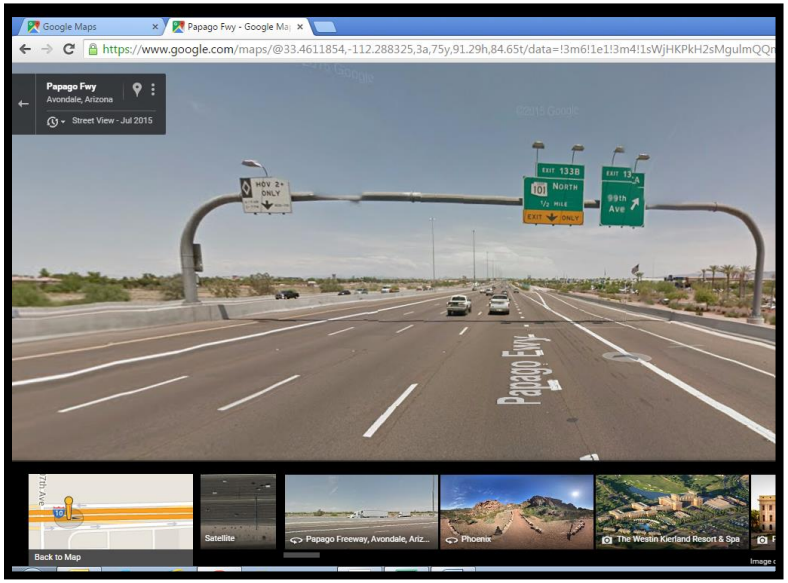


Figure 2 N- National advanced lane drop

Item 16-19 Single and multiple lane drop or option lane w/ lane drop Section 2E.24

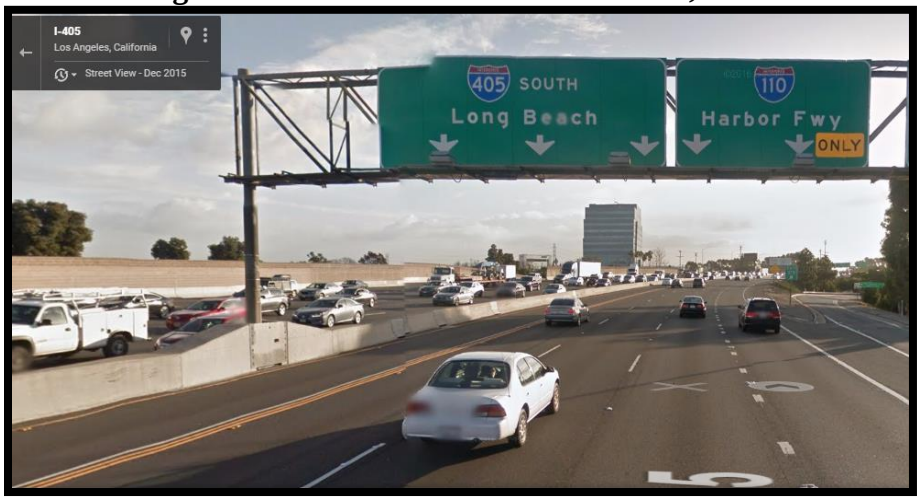


Figure 3 CA- California specific language multilane exit w/option for advanced exit

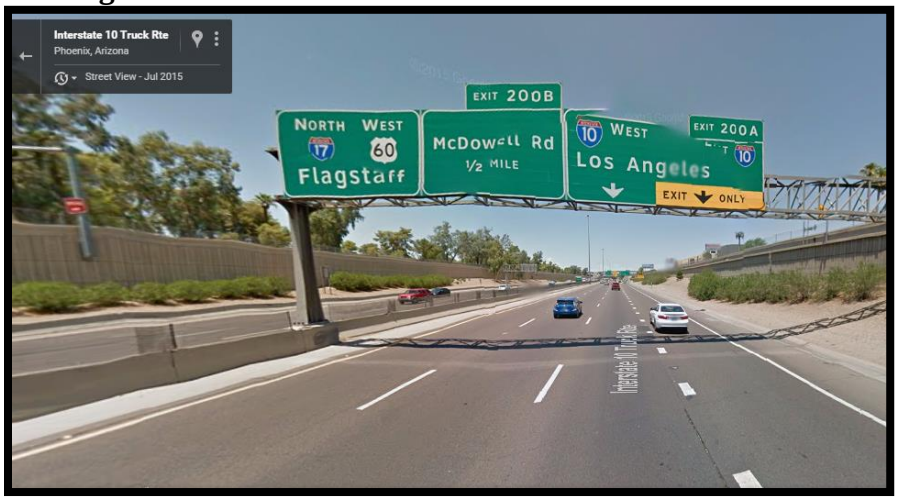


Figure 3 N- National multilane exit with option for advanced exit

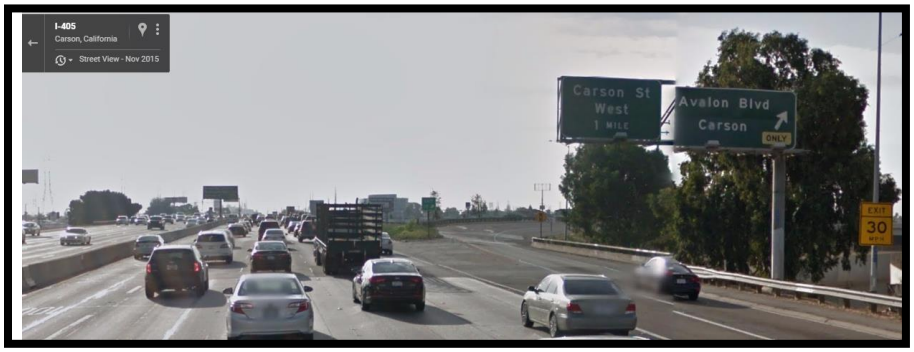


Figure 4 CA- California specific language single lane drop @ gore

Figure 4 N- National single lane drop @ gore

Item 16-19 Single and multiple lane drop or option lane w/ lane drop Section 2E.24

Proposal:

Section 2E.24 Signing for Interchange Lane Drops

Standard:

01 **The provisions of this Section shall only apply to lane drops at exits that do not have an optional exit lane. At exits that have an optional exit lane in addition to the dropped lane, the provisions of Sections 2E.20 through 2E.23 shall apply.**

02 **Major guide signs for all lane drops at interchanges shall be mounted overhead. An EXIT ONLY sign panel shall be used for all interchange lane drops at which the through route is carried on the mainline.**

03 **Except on Overhead Arrow-per-Lane and Diagrammatic guide signs (See Sections 2E.20 through 2E.22), the EXIT ONLY (down arrow) (E11-1 or E11-1f) sign panel (see Figure 2E-13 ~~and 2E-13(CA))~~ shall be used on all signing of lane drops on all overhead Advance Guide signs (see Figures 2E-14 through 2E-16). The number of arrows on each sign shall correspond to the number of dropped lanes at the location of each sign. Placement of the down arrow shall comply with the provisions of Section 2E.19.**

~~*Guidance:*~~

04 **For lane drops, the Exit Direction sign (see Section 2E.36 and Figure 2E-26 ~~*and 2E-26(CA)*~~*)* shall ~~*should*~~ be of the format shown in Figures 2E-15 and 2E-16.**

~~**Standard:**~~

04 **The bottom portion of the Exit Direction sign shall be yellow with a black border and shall include a diagonally upward-pointing black directional arrow (left or right) for each lane dropped at the exit, with the sign designed and placed so that each arrow is located over the approximate center of each lane being dropped. The words EXIT and ONLY shall be positioned to the left and right, respectively, of the arrow on the E11-1d sign panel for a single-lane drop. For a two-lane drop, the words EXIT ONLY shall be located between the two arrows on the E11-1e sign panel. The number of arrows on the sign shall correspond to the number of dropped lanes at the location of the sign.**

Option:

04a The Exit Only (W61A(CA), W61B(CA), W61C(CA), W61D(CA), W61E(CA) and W61H(CA)) panels may be used on overhead directional signs to identify lane/lanes that enter or exit a freeway where the E11 series panel does not fit due to space needed to identify destination and it is technically infeasible to place a larger overhead structure due to a combination of factors.

04b The Only (W61F(CA), W61G(CA) and W61H(CA)) panels may used on overhead directional signs to identify lane/lanes that become a freeway to freeway connector where the E11 series panel does not fit due to space needed to identify destination and it is technically infeasible to place a larger overhead structure due to a combination of factors.

~~*Guidance:*~~

04a ~~*Separate Exit Only or Only (E11-1 Series or W61(CA) Series) panels (see Figures 2E-13 and 2E-13(CA)) should be used instead of making these panels part of the sign face at the bottom as shown in Figures 2E-15 and 2E-16.*~~

Option:

05 EXIT ONLY messages of either the combination of E11-1a and E11-1b, or E11-1c formats may be used to retrofit existing signing to warn of a lane drop situation ahead.

Standard:

Item 16-19 Single and multiple lane drop or option lane w/ lane drop Section 2E.24

06 **If used to retrofit an existing Advance Guide sign, the E11-1a and E11-1b sign panels (see Figure 2E-13 and 2E-13(CA)) shall be placed on either side of a white down arrow. The E11-1c sign panel, if used to retrofit an existing sign, shall be placed between the lower destination message and the white down arrow.**

Guidance:

07 *Except as provided in Paragraph 8 for an auxiliary lane, Advance Guide signs for lane drops within 1 mile of the interchange should not contain the distance message.*

08 *Where the dropped lane is an auxiliary lane that is provided between successive entrance and exit ramps of two separate interchanges and the distance between the two ramps is less than 1 mile, the first Advance Guide sign in the sequence downstream from the entrance ramp should contain the distance message.*

09 *Wherever the dropped lane carries the through route, signs should be used without the EXIT ONLY sign panel.*

Support:

10 Sections 2E.20 through 2E.23 contain information on the signing of lane drops at exits that also have an option lane.

11 Section 2B.23 contains information regarding regulatory signs that can also be used for freeway lane drop situations and Section ~~2C.42~~ 2C.43 contains information regarding warning signs that can also be used for freeway lane drop situations.

~~**Standard:**~~

12 ~~**The Exit Only (W61A(CA), W61B(CA), W61C(CA), W61D(CA), W61E(CA) and W61H(CA)) panels shall be used on overhead directional signs to identify lane/lanes that enter or exit a freeway.**~~

13 ~~**The Only (W61F(CA), W61G(CA) and W61H(CA)) panels shall be used on overhead directional signs to identify lane/lanes that become a freeway to freeway connector.**~~

~~Support:~~

14 ~~Typical examples are shown in Figures 3B-8(CA) and 3B-10(CA).~~

Section 2E.40 Interchange Sequence Signs

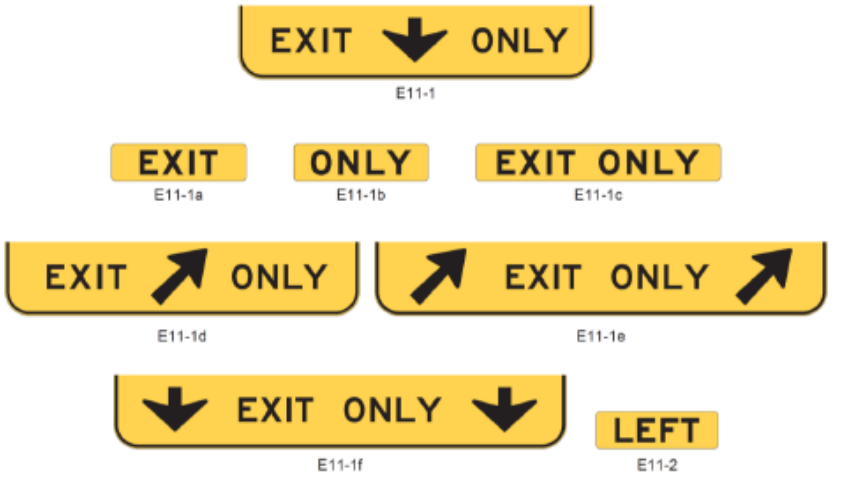
Standard:

06 **If used, the first sign in the series shall be located in advance of the first Advance Guide sign for the first interchange.**

07 **Where the exit direction is to the left, a LEFT (E11-2) sign panel (see Figure 2E-13 ~~and 2E-13(CA))~~ shall be displayed on the same line immediately to the right of the interchange name or route number.**

08 **Interchange Sequence signs shall not be substituted for Exit Direction signs.**

Figure 2E-13. EXIT ONLY and LEFT Sign Panels



NOTE: The black-on-yellow EXIT (E11-1a) and ONLY (E11-1b) sign panels are used to retrofit existing signs. See Section 2E.24.

Figure 2E-13 (CA). EXIT ONLY and LEFT Sign Panels

Action Items

Item 15-28 Subcommittee report on School Zones

Recommendation: A CTCDC subcommittee will provide a recommendation on changes to existing language in the California Vehicle Code (CVC) related to school zones and school zone speed limits. An action vote is expected.

Agency Making Request/Sponsor: Senate/ Bahadori, Voting Member

Background

The Senate Committee on Transportation and Housing requested the CTCDC to review and examine current language in the CVC regarding school zones and school speed limits and report back in 2016. A CTCDC subcommittee was formed in December 2015 to examine these topics and consider if there is a need to revise the CVC language. This subcommittee will be presenting a recommendation for the CTCDC to consider.

California Legislature

SENATE COMMITTEE ON TRANSPORTATION AND HOUSING

STATE CAPITOL, ROOM 2209
SACRAMENTO, CA 95814
TEL (916) 651-4121
FAX (916) 445-2209

September 10, 2015

Hamid Bahadori, Chair
California Traffic Control Devices Committee
Automobile Club of Southern California
3333 Fairview Road
Costa Mesa, CA 92626

Dear Mr. Bahadori:

Senator Cannella introduced legislation this year, SB 632, which would:

- Authorize a local authority to establish a prima facie speed limit of 15 mph or 25 mph in a residence district, on a highway with a posted speed limit of 30 mph or slower, within 1,320 feet of a school building or school grounds that are contiguous to a highway or school grounds that are not separated from the highway by a fence, gate, or other physical barrier;

- Authorize a local authority, upon the basis of an engineering and travel survey documenting school attendance boundaries and/or travel patterns to and from a school, to extend the maximum distance to establish a prima facie speed limit and school warning signs to a distance and/or specific locations that are consistent with the survey findings; and

- Remove the "when children are present" standard and authorize a local authority to designate these low-speed school zones to be in effect according to alternative methodologies, up to 24 hours a day.

Committee members and staff have engaged in discussion over this bill and it has become clear to us that this legislation raises engineering issues that are beyond the expertise of this committee. Specifically, should a school zone extend to one-quarter mile, or more, beyond a school? Should "when children are present" be replaced by another standard?

Given the engineering questions raised by SB 632, members of the Senate Transportation and Housing Committee feel that it is appropriate to refer these questions to the California Traffic Control Devices Committee (CTCDC) for review. We urge the CTCDC and its associated experts to seriously examine these issues. We also urge the CTCDC to report to the Senate Transportation and Housing Committee, in writing, by April 1, 2016, as to its findings on these issues and any further actions, if any, that the CTCDC plans to take or recommends that the Legislature take.

Thank you for your consideration and response.

Sincerely,

SENATOR JIM BEALL
Chair

SENATOR ANTHONY CANNELLA
Vice Chair

cc: Members, Senate Transportation and Housing Committee
Malcolm Dougherty, Director, California Department of Transportation

7. Requests for Experimentation

Item 16-17 Request to experiment with Bike Boxes in the City of Cupertino

Recommendation: Grant approval to experiment with bike boxes in the City of Cupertino

Requesting Agencies/Sponsor: City of Cupertino/Sallaberry, Voting Member

Background:
The City of Cupertino is requesting permission to experiment with a bicycle box on northbound S Stelling Road, at the intersection with McClellan Road. The intersection is signalized and it's located at the confluence of two bike lanes (See **Figure 1**). The City is seeking FHWA approval as authorized in the Manual of Uniform Traffic Control Devices. This request to experiment (RTE) is somewhat different in that it is being presented post-construction.

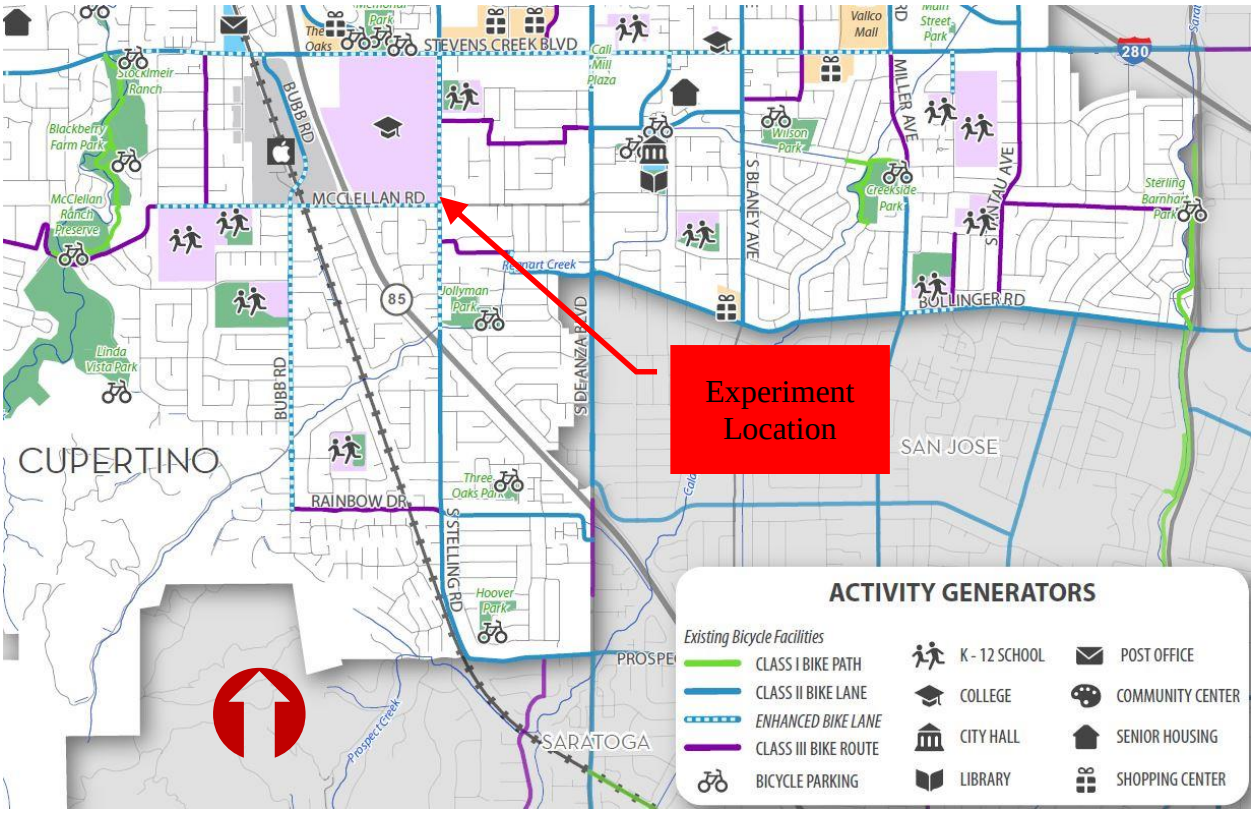


Figure 1: Experiment Location

The City of Cupertino completed a street resurfacing and striping project on Stelling Road in January 2016. The opportunity to redesign the street with Complete Streets features presented itself with the resurfacing. One such feature was a multi-lane bicycle box on northbound S. Stelling Road at the intersection with McClellan Road. Bicycle boxes are experimental features that require a request to experiment as outlined in the MUTCD. Although the City had always intended to go through the RTE process, it was not feasible at the time to wait for the RTE process to be completed before the scheduled resurfacing project. Furthermore, striping must be placed immediately following the paving work. Suspending permanent striping and relying only on cat tracking was not an option the City was willing to consider for safety reasons. Given these circumstances and with the knowledge that the design features of the bicycle box will be consistent with published design guidelines (NACTO, FHWA) and previously approved RTE applications, such as the application submitted by the City of Santa Monica on August 17, 2011., the City opted to install the bicycle box prior to submitting an RTE application. The City, however, intended to submit an application at the next CTCDC meeting and to FHWA following the installation.

The intended purpose of the bicycle box is to facilitate through and turning movements by bicyclists, both along Stelling Road and to bike lanes currently present on McClellan Road west of the intersection. The City's proposal is aimed at maximizing comfort and safety at this intersection and promoting mobility for all modes of transportation.

This submittal format is in compliance with Section 1A.10 of the MUTCD.

Proposal

To provide for safe and efficient operation of bicycles at this intersection, the City of Cupertino is proposing to experiment with a bicycle box.

A. A statement indicating the nature of the problem

Because of State Route 85 freeway and the parallel railroad tracks, there are few east-west bike routes connecting to west Cupertino (see Figure 1). McClellan Road is one of the east-west bike routes and is also a major access route to multiple schools, parks and campuses in west Cupertino. Bicyclists traveling northbound on the Stelling Road bike lanes must traverse two lanes of traffic to access the left turning lane to westbound McClellan Road (see Figure 2). This movement places bicyclists in conflict with through moving vehicles.

Figure 2: Intersection configuration before improvements (Image date: February 2014)

Northbound bicyclists approaching the intersection also continue straight on the Stelling Road bike lane. The number of northbound bicyclists turning right is low because there is no receiving bike lane on eastbound McClellan Road. It is desired that a design be approved that facilitates bicyclist left turning movements, maintains through movement, and makes the intersection intuitive and inviting to bicyclists.

As part of the design development process, bicycle boxes with bicycle-specific detection were identified to provide an ingress lane to allow bicyclists to queue at the head of the intersection and position for a through or left movement. The nature of the bike box will allow right turns on red for automobiles with the supplied right-turn lane. The layout of this intersection is depicted in **Figure 3**.

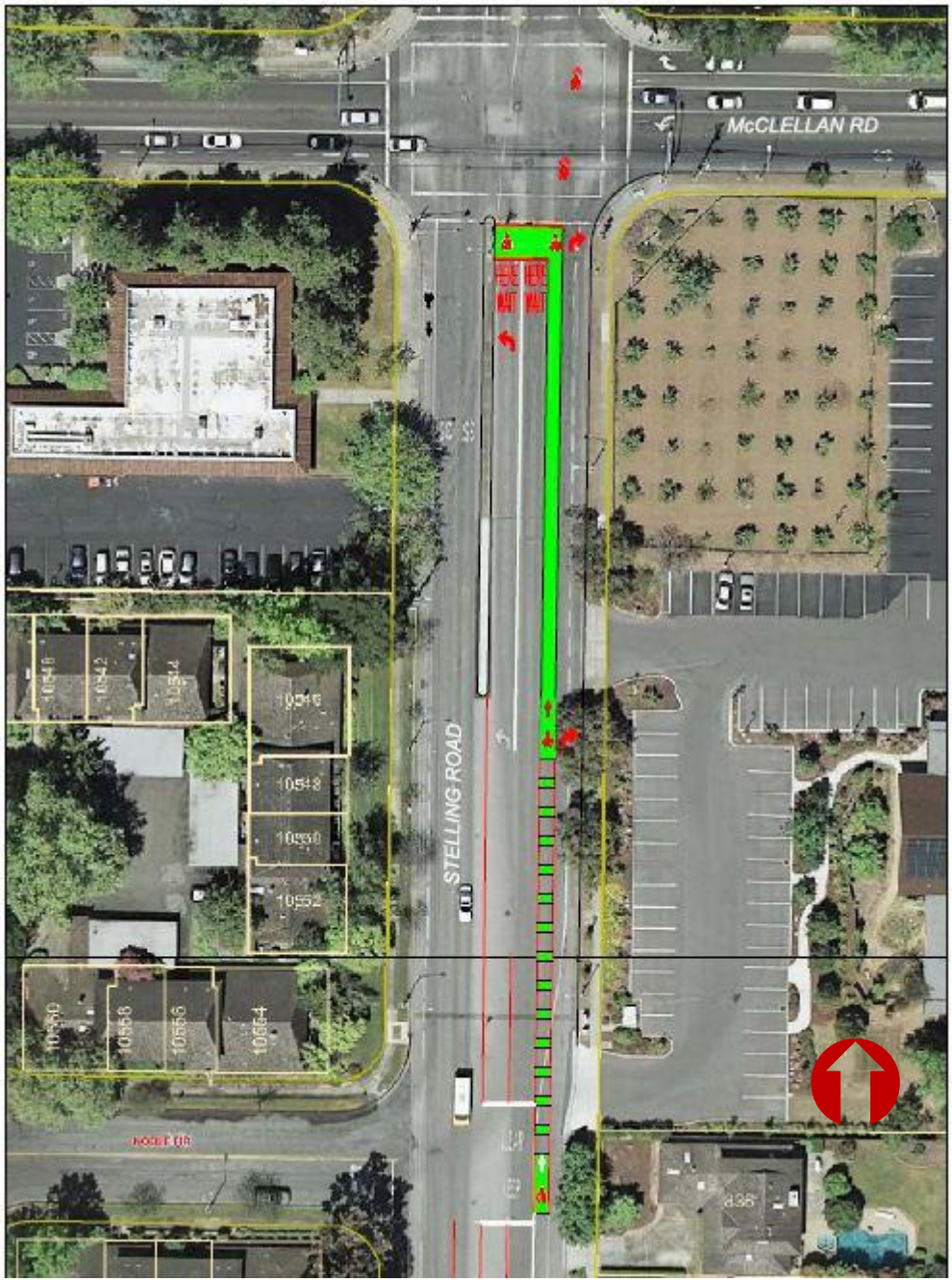


Figure 3: Striping Plan

Item 16-17 Request to experiment with Bike Boxes in the City of Cupertino

B. A description of the proposed change, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.

This experiment would evaluate the use of a multi-lane bicycle box at the northbound approach to this intersection.

The bicycle box is a treatment depicted in the NACTO Urban Bikeway Design Guide that is composed of a white outer box with a green background and a bicycle stencil in accordance with MUTCD Figure 9C-3. Bicycle Boxes are addressed by FHWA in the separated bikeways planning guide and on the bicycle/pedestrian page at the following link:
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/mutcd/bicycle_box.cfm

C. Any illustration, photograph, or videos, which would help, explain the experimental device or use of this device.

The installed layout of the bicycle box is illustrated in **Figure 4**.

Figure 4: Installed Bicycle Box (Image date: January 2016 – Immediately post construction)

D. Any supporting data as to how the experimental device was developed, if it has been tried, in what ways it was found to be adequate or inadequate, and how was this choice of device or application arrived at.

The bicycle box has been in use in the United States for nearly a decade. Formalized design guidance is currently found within the NACTO Urban Bikeway Design Guide, however this guidance was created based on existing practice within the United States as well as guidance provided from other countries. FHWA has recently released limited guidance on the use and design of bicycle boxes within the 2015 Separated Bike Lane Planning and Design Guide. Many configurations within the United States have been developed by various cities. The Bicycle and Pedestrian page under the Office of Planning, Environment and Realty within FHWA lists 25 approved requests to experiment being approved since 2008 for this treatment.
This installation bears a few notable features. First, it is not being used in front of a right turn lane and therefore does not have any of the disadvantages associated with through bicyclists on a green indication coming in conflict with right turning vehicles. This installation provides queuing advantages at the signal for bicyclists and on a red signal indication allows for positioning for a left turn onto McClellan Rd.

E. A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright.
To the best of the City of Cupertino‘s knowledge, the concept of using bicycle boxes to supplement standard traffic control devices are not protected by patents or copyrights.

F. The time period and location(s) of the experiment.
The bicycle box was installed in January 2016 at the northbound approach of the Stelling Road and McClellan Road intersection.
The experiment will be for a one-year period (from approval of experiment) unless interim approval for the use of bicycle boxes is granted through FHWA at any time during this review period.

G. A detailed research or evaluation plan that must provide for close monitoring of the experimentation, especially in the early stages of its field implementation. The evaluation plan should include before and after studies as well as quantitative data describing the performance of the experimental device.
The City of Cupertino conducted 24 hour video observations of the intersection in August of 2015 (Thursday the 27th and Saturday the 29th). We will use these videos for data analysis of the project area prior to implementation.
Bicyclist and motorist behavior and interaction will be observed by staff or by video at the proposed bike boxes approximately 6 months after experiment approval. Variables to be studied and recorded in the field will be:

- Crash data compared from the previous five years and one year subsequent to installation
- Conflicts and avoidance maneuvers between motor vehicles and bicycles
- Video observation will be conducted on a Thursday and a Saturday in 24 hour periods for a total of 48 hours of video surveillance. The video will be used to evaluate:
    - Incidents of conflicts between the motor vehicle and bicycle,

- Conflicts and avoidance maneuvers between motor vehicles and bicycles,
- Bicycle position and behavior approaching the intersection when making left turns
- Bicycle position approaching the bicycle box and queued at the intersection
- Motor vehicle position approaching the bicycle box and queued at the intersection,

The City of Cupertino will provide semi-annual progress reports for the duration of the experiment. The above information will be presented in a final report within 3 months following the completion of the experiment.

H. An agreement to restore the site of the experiment to a condition that complies with the provisions of this Manual within 3 months following the end of the time period of the experiment. This agreement must also provide that the agency sponsoring the experimentation will terminate the experimentation at any time that it determines significant safety concerns are directly or indirectly attributable to the experimentation. The FHWA's Office of Transportation Operations has the right to terminate approval of the experimentation at any time if there is an indication of safety concerns. If, as a result of the experimentation, a request is made that this Manual be changed to include the device or application being experimented with, the device or application will be permitted to remain in place until an official rulemaking action has occurred.

The City of Cupertino agrees to the above conditions.

I. An agreement to provide a progress report at 6 months for the experimentation and an agreement to provide a copy of the final results of the experimentation to the FHWA's Office of Transportation Operations within 3 months following completion of the experimentation. The FHWA's Office of Transportation Operations has the right to terminate approval of the experimentation if reports are not provided in accordance with this schedule.

The City of Cupertino agrees to the above conditions, however based on the information that FHWA is looking to collect, all of this will be available within the final report.

8. Discussion Items:

Agenda Item 16-18 California Transportation Agency request to expand CTCDC membership

Agency Making Request/Sponsor: Caltrans/ Duper Tong, voting member

Background:

As result of the State Smart Transportation Initiative (SSTI) Report on Caltrans in 2014, one of the recommendations by the California Transportation Agency is to consider expanding membership from the LOCC from two to three members to represent rural, sub-urban, and urban cities. This would allow consideration of special needs in larger metropolitan cities.

The SSTI Report http://www.dot.ca.gov/CIP/docs/SSTIReport.pdf, page 50 stated:

Caltrans should generally rethink its approach to facilities in metro areas and town centers. Caltrans grew up with the idea it was moving travelers between cities, but now most of its facilities provide access between local destinations. The department's recent Main Streets guide is a nod to this situation, but it builds upon a foundation of underlying design standards that tend not to provide high-quality conditions for non-motorized users. The policies and standards in metro areas and towns should be very different than those for facilities in low-density rural areas; where the latter may legitimately focus on speed and throughput of motor vehicles (though not to the extent that they induce new travel and low-density development), the former should put pedestrian, bicyclist and livability concerns before auto-mobility. Narrower lanes, slower speeds, and pedestrian amenities should all be the default. An example of another DOT addressing this issue comes from Massachusetts, where the MassDOT design manual, as a former commissioner puts it, reverses historic practice and contemplates designing projects "from the outside [of the right of way] in," and state policy requires all projects to at least maintain existing nonauto levels of service. But the work extends beyond design; as noted in the Plan of Action, developer exactions can impede the type of compact development favored by state policy, and success in the SB 743 rulemaking will help improve Caltrans' work in urban areas.

9. Tabled Items

None

10. Next Meeting

September 1, 2016
District 11
San Diego

11. Adjourn